

REMARKS

Favorable reconsideration of the subject application as amended above is respectfully requested in view of the comments below.

Claims 1-15 are pending in the subject application. Claims 3 and 12 have been amended as independent claims. Accordingly, no new matter is added by these amendments to the claims.

I. Rejection of Claims 1-15 Under 35 U.S.C. § 112, First Paragraph (Written Description)

Claims 1-15 stand rejected under 35 U.S.C. § 112, first paragraph. The Examiner asserts that the specification does not provide adequate written description to convey to one of skill in the art that Applicant was in possession of the claimed invention at the time of filing the application.

Applicant respectfully disagrees with the Examiner.

The subject application is a continuation application of U.S. application Serial No. 134,699 (US 6,072,045). The '045 patent, which has the same specification as the subject application, issued with claims directed to nucleic acid molecules encoding the chimeric polypeptides of the present claims, as well as cells comprising nucleic acid encoding the chimeric polypeptides of the present claims. For example, claims 1 and 6 of the parent patent recite:

1. A nucleic acid molecule encoding a chimeric isoprenoid synthase polypeptide that comprises an asymmetrically positioned homologous domain and that catalyzes the production of isoprenoid reaction products that are not produced when said domain is positioned at its naturally-occurring site in an isoprenoid synthase polypeptide.
6. A cell comprising the nucleic acid molecule of claim 1.

The Examiner's assertion that the present specification does not provide written description support of the claimed plant cells containing nucleic acid encoding chimeric polypeptides and transgenic plants is not taken well since the U.S.P.T.O. has already determined

that the same specification provides sufficient written description and an enabling disclosure to support claims to the nucleic acid encoding the same chimeric polypeptides and cells transformed therewith. How is it that the specification is sufficient at one point in time, but insufficient at another? The U.S.P.T.O. has made a determination that the present specification provides written description support for nucleic acid molecules encoding the genus of chimeric polypeptides presently claims and cells transformed therewith. Therefore, there has already been a determination that the specification provides the relevant identifying characteristics needed by one of skill in the art to completely determine the structure of the claimed nucleic acids. As such, the specification provides a sufficient written description of the claimed plant cells and to satisfy the requirements of 35 U.S.C. § 112, first paragraph.

It is also submitted that the specification also provides sufficient written description of the subject matter of claims 7-15, which are directed to transgenic plants comprising the nucleic acid molecule claimed in the issued patent. The examiner has pointed to no shortcomings of the specification in regard to the teachings of how to obtain transgenic plants using the nucleic acid molecules of the invention. Indeed, on pages 29-33, methods of generating transgenic plants are provided in detail sufficient to satisfy the written description requirement of 35 U.S.C. § 112.

Thus, the specification provides sufficient written description of the claimed transformed plant cells containing nucleic acid encoding chimeric polypeptides, and transgenic plants. Accordingly, it is respectfully submitted that the rejection of claim 1-15 under 35 U.S.C. § 112, first paragraph is traversed.

II. Rejection of Claims 1-15 Under 35 U.S.C. § 112, First Paragraph (Enablement)

Claims 1-15 stand rejected under 35 U.S.C. § 112, first paragraph. The Examiner asserts that the specification does not enable the genus of chimeric polypeptides, plant cells and

transgenic plants claimed, but that chimeric polypeptides CH1-CH14 and plant cells and transgenic plants containing any of CHI-CH14 are enabled.

Applicants respectfully disagree with the examiner.

The specification provides fourteen different examples of chimeric polypeptides of the invention. These polypeptides were generated using the methods described in the specification, and in particular, using knowledge of the conservation of domains in this family of polypeptides. There is sufficient information in the specification and published information known to those skilled in the art concerning the conserved domains of isoprenoid synthase genes to enable the skilled practitioner to practice the claimed invention. The present application teaches how to isolate and use the conserved domains to generate chimeric polypeptides having new activities, and sequence alignment information for this family of genes/polypeptides is readily available.

Furthermore, it is not necessary that every chimera within the scope of the claims be functional; it is only necessary that one of ordinary skill in the art have a reasonable expectation of success. The present application clearly provides sufficient guidance and provides sufficient examples to enable the skilled practitioner to generate other chimeras based on the teachings of the specification and knowledge of conserved domains. Moreover, there is an abundance of published data concerning the conservation of domains in these and related enzymes, which the skilled practitioner can use and indeed has used over the years since the present application was filed to generate chimeric enzymes.

Furthermore, there is **no evidence** that these conserved domains from different plants will not tolerate chimerization as suggested by the Examiner. This art is not unpredictable as asserted by the Examiner and undue experimentation would not be required to generate chimera based on the teachings of the specification and knowledge of the conservation of domains of these proteins.

Finally, the claims of the present application are no broader than those of the parent '045 patent. Indeed, claims to cells transformed with nucleic acids encoding the claimed polypeptides have already issued, and therefore, present claims 1-6, which are more narrowly directed to plant cells comprising a nucleic acid molecule which encodes a chimeric polypeptide of the invention, also meet the requirements of patentability.


Accordingly, the rejection of claims 1-25 under 35 U.S.C § 112, first paragraph is respectfully traversed.

It is respectfully submitted that the present application is in condition for allowance, an early notification thereof being earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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